AUSTRALIAN SOCIETY FOR LIMNOLOGY

NEWSLETTER

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Australian Society for Limnology Newsletter

Volume 26 Number 4 November 1988

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Copy deadline for next issue:

Material for publication in the Febrary issue of the Newsletter should be sent to the Editor before 21 st January 1989.

Fax (09) 332 2507

Long articles would be appreciatively received in any one of the following three modes: as camera-ready laser printed copy (New York, 12pt, fully justified), as formatted text on Macintosh disc, or as unformatted text on IBM or IBM compatible discs.

Australian Society for Limnology

The Australian Society for Limnology is an association of over 400 people with professional or amateur interests related to Australian inland waters. Since its inception in 1961, the Society has played an important role in fostering limnology in this country. The ASL promotes liaison between limnologists in academic, private and governmental institutions and has a vested interest in the conservation of aquatic and related resources. Annual conferences are held near centres of limnological interest, and the programme includes scientific sessions, field excursions and social activities.

The ASL produces a newsletter with notes on activities, articles of general interest, book reviews and conference announcements; a Bulletin of original scientific papers and occasional Special Publications. A further publication is the Directory of Australian Limnologists.

Membership details

Membership applications are welcome; five classes of subscribing membership are available:

Ordinary Members:	$20.00
Student Members:	$10.00
Life Members:	$200.00
Institutional Members:	Fees on application
Sustaining Members:	Fees on application

Membership subscriptions cover the period from 1 July to 30 June and members receive all publications. Members may also choose to receive the Australian Journal of Marine and Freshwater Research, the Australian Journal of Zoology and/or the Australian Journal of Botany at reduced rates. The subscription period for each journal is the calendar year following the year in which the subscription is paid.

Enquiries relating to membership should be directed to:

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Treasurer/Membership Officer ASL
22 Netherby Avenue
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(03) 560 4406

EDITORIAL

A fairly slim edition of the Newsletter this time but our lack of quantity is more than compensated for by the quality of the contributions! I've decided that probably the best thing about being editor is being the first to read the wide variety of limnological correspondence that now arrives in my mail. Leon's third letter from America and Ian Bayly's discovery of some interesting new Australian species certainly enlivened otherwise routine days. As yet we have indulged in very little, if any, censorship of the material we receive, which may not be in the best interests of either interstate or Oz-US relations but has created some interesting reading.

On editorial matters Steve Rolls recently left Murdoch to take up a position with an environmental planning group in Perth and so is no longer able to have the input with the presentation and layout of the Newsletter that he had provided since August 1987. Much of the "new look" newsletter had been Steve's undertaking (not to mention the cartoons) so many thanks Steve for your efforts . Thanks also to Fiona Whittles who has cheerfully accepted the challenge of taking over from Steve.

Finally, although it seems far too early to say this

MERRY CHRISTMAS AND HAPPY NEW YEAR

and please start working on your contributions for January 1989 !

Jenny Davis

~~President's Report~~

In the words of Tim Doeg (recently of New Scientist and extinct water mite fame) ASL entered the 21st Century on October 5th 1988 when the first Teleconference Executive Meeting was held. Eleven members from various parts of Australia participated: Andrew Boulton (SA), Stuart Bunn(Qld), Tim Doeg (Vic), Margaret Hart (Vic), Terry Hillman (NSW), Pierre Horwitz (Tas), Richard Marchant (Vic), Richard Norris (ACT), Rod Oliver (NSW) and Tim Wrigley and myself (WA).

For the comparatively low cost of $219 eleven of us were able to partake in a 45 minute Executive Meeting without leaving the comfort (?) of our respective offices. Despite a slight delay at the beginning which was accompanied by much giggling, the latest in electronic beeps and whistles, and the voice of a slightly frantic operator trying to locate an errant Dr. Pierre (Pierre Horwitz) the teleconference proceded with amazingly few technical hitches. I had not realised how nervous I could become when faced with a microphone, an empty room, and the prospect of either eleven people all trying to talk at once, or long silences. However despite my total lapse of memory concerning meeting procedure, useful discussion did occur and the items covered included a report from Margaret Hart on the covert financial state of ASL, the nomination of Stuart Bunn as the next editor of the Bulletin (see details elsewhere in the Newsletter) and a progress report from Richard Norris and discussion of the 1989 Congress.

It was quite exciting to actually be able to communicate as a group, and the overall result I think indicated that a teleconference may be the best means available yet to hold executive meetings with proper Australia-wide representation by members. A further teleconference Executive meeting is now scheduled for February 1989.

Jenny Davis

FIRST ANNOUNCEMENT.....FIRST ANNOUNCEMENT

ASL 29TH ANNUAL CONGRESS

Jabiru 12-15 May 1990

Details of registration and a call for papers will be made following the July 1989 Congress in Canberra. If you wish to have first choice of the accommodation and field trip options you will need to register BEFORE the advertised closing date (it will be early so get organised).

Pre-congress Symposium 11 May 1990

"Water Management in the Alligator Rivers Region." Invited speakers from the mining industry, government regulators and research institute addressing major aspects of this applied topic. A technical tour of an operating uranium mine is one option being investigated.

Organising committee: *Max Finlayson, Doug Holdway, Kay Bailey, Chris McQuade, Don Anderson.*

Enquiries: Isabell von Oertzen (Tel. (089) 792 300, Fax (089) 792 076, Telex 85457).

Information on CSIRO Journals

Anne Grant, the Managing Editor of AJMFR, has written to say that the journals are now recovering from the review of CSIRO structure! At the end of September AJMFR Vol 39 no..4 was at the printers, no.5 had been typeset and no.6 was queing for typesetting. Anne is now accepting papers for next years first issue. concessionary prices for CSIRO journals are given below.

CSIRO Journals: 1989 Concessionary prices for ASL members:-

Aust.J. Mar. Freshwater Res.	$70
Aust. J. Bot.	$65
Aust. J. Zoology	$70
Invertebrate Taxonomy	$110

CONGRATULATIONS TO BILL WILLIAMS!

The Royal Society of South Australia has awarded the 1988 Sir Joseph Verco Medal to Professor Bill Williams of the University of Adelaide. The medal recognises outstanding scientific achievement. In Bill's case it marks some 30 years of dedication to research, teaching and writing about Australian limnology.

"The Hynes/ Williams Limnological Library"

Professor H.B.N Hynes, a previous Jolly award winner and well known friend of Australian Limnology, has donated his entire library of reprints (together with numerous limnological books) to Professor W.D. Williams. This donation follows the retirement of Professor Hynes from the University of Waterloo, Canada. Professor Williams is delighted with this gift and notes that the collection represents a further significant contribution by Professor Hynes to Australian limnology, since the collection contains a comprehensive set of much of the earlier classical literature (as well as much recent literature) concerning the ecology of running waters.

The collection arrived in Adelaide some months ago and has now been housed in the Department of Zoology, University of Adelaide. With the help of Professor Hynes bibliography contained on PC disks, it is now in the process of being catalogued with the help of Dr. Martin Thomas. There are well over 6,000 reprints in the collection and, together with some invaluable long runs of various journals, the collection forms an information resource on the ecology of running waters second to none.

Access to the collection is open to all members of the ASL (and indeed to all bona fide Australian limologists) after appropriate arrangements with Professor Williams. Mr. R.G. Taaffe is the honorary curator to whom coresspondence should be addressed in the first instance. Professor Williams, it is noted, has signalled his own intent ultimately to combine his own collection of reprints, papers and limnological books with Professor Hynes collection and donate the total library to an appropriate limnological institute. To that end, all reprints and books are now stamped "Hynes/Williams Limnological Library". Professor Williams has said, however, that he hopes it will be some years befors he finally "gives it away".

Notes from FASTS (Federation of Australian Scientific and Technological Societies) reprinted from the FASTS Newsletter September 1988

GOVERNMENT UNDER SIEGE BY SCIENTISTS AND TECHNOLOGISTS

Scientists and technologists are fighting back against a series of disastrous decisions taken by the Federal Government. These decisions include:-

Downgrading of the CSIRO

The CSIRO has suffered progressive budgetary cuts over the last five years. Appropriation funding has fallen by over 28% in real terms since 1983/4, while for 1988/9, it is 12% below 1987/8 in real terms.

These reductions in government funding occur at a time when Australia's research and development effort in terms of the proportion of GDP going to R&D puts us on a par with Iceland and Purtugal among OECD countries.

10% of professional scientific staff in CSIRO have been retrenched (both voluntarily and involuntarily) over the last two years and further substantial retrenchments are foreshadowed for 1988/9.

It is becoming a common practice for scientific staff to work voluntarily after retrenchment or retirement to ensure that important work is completed. Similarly many CSIRO scientific staff are meeting more and more of their travel costs from their own pocket.

A number of our first rate scientists are looking overseas for their future.

The problems are not confined to agriculture, mining and the environment but the smaller allocation within CSIRO has been targeted more strongly towards manufacturing industry research at the expense of other areas.

This is occurring at a time when the expanding Asian economies are demanding more of our commodities, and tourism - dependent on effective management of the environment, is booming. We are risking all this in the downgrading of research into land quality, product quality, pest control, disease prevention and environmental protection.

Transfer of funds from universities to the ARC

The Federal Government's decision to transfer more than $120 million to the Australian Research Council from universities' infrastructure funds will cause universities to cut services in libraries and equipment.

The threat of taxing research training

Only about half of the 30,000 postgraduate students will receive a "scholarship" that exempts them from the "Wran-tax" on their postgraduate studies. Universities will be able to direct these "scholarships" to honours or postgraduate students within guidelines being developed within the Department of Employment, Education and Training. The uncertainty attached to all this is acting as a deterrence to students contemplating further studies.

The lack of confidence in the Research Council Chairperson Professor Don Aitken

The Government-appointed Chairperson of the ARC has been subject to severe, prolonged and unanimous criticism by scientists of the ARC and its sub-committees. It is argued that he does not know the basics of how scientific and technological research is carried out and is unable to protect S&T research in the wider forum of the National Board for Employment, Education and Training.

The Government's overall economic policy

While the Government wants (for political reasons) to restructure Australia's economic base to strengthen manufacturing, high interest rates preclude manufacturers from investing in plant and equipment. Only those ideas which can be commercialised without major equipment investment can be considered. Australia has major export successes in scientific and medical equipment which fall into this category, such as the Nucleus heart pacemaker, the Cochlear bionic ear and a whole range of scientific accessory products.

Although scientists and technologists are blamed for producing a great deal of published research but too few commercial products - it is patently not the fault of the researchers but is caused by the Government's monetary policies.

The 150% tax incentive for R&D was being taken up by companies that could commercialise the R&D without major plant and equipment investment, such as software producers, or mining companies where equipment was already in place. This did not fit the Government's restructuring plans and so the incentive is being curtailed.

The siege

FASTS has been taking up these issues through press releases and by representations to politicians. Individual scientists and technologists within FASTS have voiced their concerns through Letters to the Editor. Two of these are included in September

newspaper clippings, one to "The Age" from Laurie Hammond, one of FASTS' Vice Presidents, and one to "The Canberra Times" from one of FASTS' Group 1 Board Members, Tony Wicken.
"Four Corners" plans a programme on 10 October about the problems of S&T research. The issues are not going to go away. Politicians do react to what is published in the media. If you can spare the time, please write to the Editor of your local Newspaper(s) indicating your concern.

Dinosaur Cranial Capacity

Update on the ASL Bulletin

After three years as the editor of the ASL Bulletin Sam Lake has decided that he would like some respite and Stuart Bunn has agreed to take up the challenge in 1989.

Sam is hopeful that the next Bulletin (no. 12) will be out before Christmas, page proofs are with authors now. During recent years the limiting feature with the production of the bulletin appears to have been the authors! In particular authors need to be much more speedy with papers that are returned for revision.

Papers for publication in the next issue should be sent to Stuart Bunn, School of AES, Griffith University, Nathan, Queensland 4111.

Stuart's first editorial task will be the publication of Noel Hynes key to the Tasmanian Stoneflies.

Finally, many thanks on behalf of ASL to Sam Lake and Dave Morton who have devoted considerable time and effort to the Bulletin since 1986.

LETTER FROM AMERICA (No. 3)

Ah well, I'm still here, and since I have yet to see a copy of the last ASL newsletter (hint,hint), I shall assume that no one objects to the self-indulgent ruminations of a post-doc abroad.

As with LFA#2, the central topic is meetings. Lots of them, all in one place at one time. The place was Davis, Californya (thats how its pronounced using the Clive James system for transliterating American into English), and meeting there was the Ecological Society of America (ESA) together with a whole bunch of other societies under the auspices of AIBS (the American Institute of Biological Sciences). That amounted to about 2000 or more biologists (if you can call cell-smashers and gene-benders "biologists") attending more concurrent sessions than there are grammatical errors in this letter. The collected abstracts resembled a small phone book and, for consistence, the cost of registration, accomodation, and food resembled a phone number, especially for those of us paying for ourselves.

Since I didn't go to the rivetting sessions on sugar transport in plant veins, I shall yammer on about the things I did see that purported to be on (unfashionable) whole organism biology.....and bigger. Even worse I shall concentrate on the bad bits, because its Christmas, and because you'll all need a bit of cheering up before the onslaught of endless toyshops, unbearable relatives, and the sheer tedium of re-reading section 6.3.4 from that perpetual grad student who has been under your tender care for the last few decades. Besides you'll read the good stuff pretty soon anyhow, and who was expecting science in this column anyway? You were expecting Robyn Williams?

First, the wet stuff. Regrettably, some who had attended NABS or ASLO would have had a certain sense of deja vu. Yes, the tiles and claypots were there again, as were the three-colour (...sorry, color) 3D slides that probably covered up some dubious data. not that anyone got a chance to digest any of these visual aids as they

whizzed by in the allotted 12 minutes. Perhaps the Macintosh has spawned the visual AIDS of scientific talks. Sorry about that.

There was also a symposium (= longer talks) on Complex Innereactions (= complex interactions) where all the plankton heavies made a valiant attempt to convince us that zooplankton rule the seiches, so to speak. There was some impassioned bloodletting afterwards as various slurs such as "pseudoreplication" and "bottom-up not top-down" filled the air. At this point I felt that True Science that Mattered to the Universe must be being discussed elsewhere, so I stalked off to hear what other disciplines had to offer.

And I had to choose the Landscape Ecology session didn't I ? Well, these people say that they are scaling ecology up to deal with the real world, and some of them seem to be making a pretty good fist of it. Tim Allen (Dr Hierarchy) kicked off the session with an animated explanation of how those of us who had read Allen and Starr had probably got it wrong. Entertaining nonetheless, and not a 3D graph anywhere. Even better the talk had ideas. I hear the Empiricists have got a hit squad out after him, so he may soon be hounded to an early grave at the bottom of some limnocorral somewhere. Some of the other Landscape Ecology talks, however, left one wondering whether some of the authors really had all their marbles. One speaker seemed terribly perplexed about why we had not applied counter-current exchange to ecological theory. There were batallions of persons tracing air photos with digitisers and putting it in their GISs and modelling things and concluding that perhaps equations derived from Canadian tundra aren't much use for predicting forest production in Montana. I confess to being unsurprised by that revealation. It seems a pity that there is no systematic method for ensuring that these people have their brains in gear before they get funded.

Clearly, I was being unfair. I didn't understand the tools they were using, so I rocked along to the symposium on Remote Sensing. It started with a cautious talk on how no one has the foggiest idea what all those pretty colours mean most of the time, so please put some more coins in (to paraphrase that marvellous cartoon by Bruce Petty). And, Lo! if you use nested acronyms (which are acronyms made up of the first letters of a string of acronyms-I'm not making this up) some clown will put more coins in. The evidence came in the next talk which was a multi-media blast using a video projector, two slide projectors and more artwork than in "Who Framed Roger Rabbit?". We were regailed for twenty minutes about a project that was measuring things on a patch of grassland in Kansas: 150

scientists, 3 satellites, 5 aeroplanes and helicopters, its own air traffic control tower, several micrometerological towers, a few truck-borne machines capable of measuring carbon fixation on a photon-by-photon basis, and I'm sure I heard the word "botanist" mentioned somewhere although he or she was probably unpaid. Data? Oh yes they had lots of that in several relational databases with SQL interfaces, but they haven't sort of, well, looked at it yet. Or if they had they sure didn't want to talk about it Alternatively they'd sent the wrong robot along to give the talk; perhaps somewhere else on this planet at the same time a room full of policy analysts and funding executives were being bored by a presentation of hastily scribbled overheads and a rather pale, elderly humanoid droning on with more caveats than conclusions. I remember talks like that; whatever happened to them?

Well the sessions on Ecological Modelling held that promise. By now my sense of the ridiculous was well honed, and there are few things more satisfying than watching a bunch of nerdy modellers getting upset when years of programming only manages to recreate error limits that even benthic biologists would be proud of.

Wrong. I found the modelling talks among the most comprehensible and stimulating I went to. I heard heresies being uttered such ass choosing the mathematics to fit the biology and not vice-versa; those rotten Lotka-Volterra equations were barely mentioned; statisticians were admonished for not being creative and flexible enough in developing techniques for real data. This new breed of modellers even talked in complete sentences, and cohereantly at that. Most odd, but refreshing none-the-less.

So much for the frivolous stuff. This last bit is serious. It is directed at all those lean and hungry PhDs or near PhDs who are looking for a post-doc in America. In order to be guaranteed of more than a passing glance when you approach the Hot Shot you want to work with, be sure to have published a paper in L&O or Ecology which is just slightly ahead of what he or she is doing. This of course is impossible , because the Hot Shot has moved on from the topic of that paper of theirs you read last week because the work and the money was finished three years ago. No one in the USA reads stuff in journals because they've read it all as a draft when it was first submitted three years ago anyway.

So since you're so far behind, you'll have to make yourself interesting in some other way. The only sure-fire way is to aquire a tenured position in a university on the east coast before you get here. most Hot Shots want to spend their sabbatical in Osstraylia,

and need someone to spend it with. The east coast bit is important because they <u>really</u> only want to come to Osstraylia so they can go visit something called Da Barrya Reef, which many of them believe lies off the coast somewhere between Sydney and Ayers Rock. If you can't manage a tenured position, then at least visit Da Barrya Reef before you meet your Hot Shot so that you can give informed but gratuitous advice or share diving yarns if Hot Shot has already been there.

If you can't do any of those then offer to do something menial like identify rotifers or orthoclads, or pretent to be able to identify diatoms at twenty metres or something. one usually has to be psychic or a psychiatric case to do any of those things anyway; the former talent is useful in Californya and the latter seems essential for Noo York. If, however, you are stable, of sound mind and body, thoroughly sick of slaving over a hot microscope, or tired of trying to unravel your supervisor's hopelessly scrambled data files, then um..... have you thought of how exciting a career in accountancy might be?

So there you have it. The Christmas special LFA#3: guaranteed free of Bin g Crosby songs, pictures of Paul Hogan or any redeeming scientific merit. If you've lasted reading this drivel for this long you must be bored (you should see what it did to the typist). Next time I promise to find something more interesting to talk about, although given the grim state of opinion polls at the moment I wonder if ecology is going to exist at all after a certain weekend in November. Keep breathing folks, its our only chance.

Merry Christmas from Leon Barmuta's evil twin (if you don't read "Doonesbury" you won't get the last bit).

Leon Barmuta
UCSB Biological Sciences

STATE and TERRITORY AFFAIRS

New South Wales

Correspondent: Rod Oliver, MDRFC, PO Box 921, Albury NSW 2460

Limnological "Conclave"? At the last Research Advisory Committee meeting held at the Murray-Darling Freshwater Research Centre in August 1988, it was suggested that the Centre should arrange a meeting of scientists responsible for directing and/or leading research groups carrying out limnological research in the Murray-Darling Basin. The principal purpose in meeting will be to develop an ongoing strategic plan for coordinating research effort to the mutual benefit of all participating laboratories.

This will involve an exchange of information about existing research programmes (in outline), academic and facility strengths and weaknesses in each laboratory, important gaps in limnological understanding that are not receiving attention, information needs of water resource managers, plans for future developments in each laboratory, perceived opportunities for collaborative research with other groups, and proposals for technology transfer.

The Murray-Darling Basin Limnological "Conclave" is proposed to be held on Wednesday, December 7, with representatives from Victoria, New South Wales, Queensland and South Australia.

Our man abroad: Russ Shiel was one of about 90 attendees from 20 countries at the Vth (triennial) International Rotifer Symposium, sponsored by the University of Milan, and held at Gargnano, on Lake Garda, northern Italy, 12-17 September 1988. Significant advances were described in genetic analysis (sequencing of mitochondrial DNA), biochemistry (chemical basis of mate recognition), systematics (SEM of trophic fine structure, and computer cladistics), physiology (TEM of musculature), with a broad spectrum of ecology, aquaculture, behaviour and taxonomic papers.

Australian contributions were: Bacterial grazing by rotifers in Murray billabongs [some do, some don't] (Doon et al. MDFRC); Tasmanian Rotifera and habitat heterogeneity [high degree of endemicity, particularly in acid dune lakes on the west coast, a result of Tyler tracking things back from his steam train jaunts?] (Koste (FRG), Shiel (MDFRC) and Tan (Western Mining); taxonomy, biogeography and why Ward and Whipple should be abandoned in the southern hemisphere (Koste (FRG) and Shiel (MDFRC)). The Symposium Proceedings will be published in the *Developments in Hydrobiology* series.

South Australia

Correspondents: Andrew Boulton and Lance Lloyd,Department of Zoology, University of Adelaide, GPO Box 498, Adelaide 5001.

In deference to requests from anonymous authors of threatening letters, we present the following "stategoss" in dull prose. Anyway Banjo and Snaggy-tunes can't think of a rhyme for Coopers - probably too much 3-day old port.

Dr Frank Conte has once more imported chemico-physiological technology to the Zoology Department at the University of Adelaide- and more importantly, supplies of cakes for Friday afternoon tea. He returned recently from a "smash-and-grab" raid on acidic salt lakes in the West, proudly bearing bottles of unsuspecting Artemia - details of his work will be forthcoming in the next State news.

Some smashing and grabbing has also been occurring in various aquatic habitats ("bongs", backwaters, anabranches and the main channel of the River Murray) in the Chowilla region near the S.A.-Vic. border during the first week of October. Armed with Coopers Fine Sparkling ale, 3-day old port, banana lounges and, of course, assorted sampling gear, a motley crew including Fran "Physicochem Phran" Sheldon, Richard "Tigger" Musgrove, Lance "The Boss" Lloyd, Brendan "Shrimp-baiter" Atkins, Andrew "Bananas" Boulton and miscellaneous bat-lovers and leather-workers arrived at the burr-ridden floodplain, by 1am on Friday night and by 1am on the following Tuesday morning, had collected data on physicochemistry and the composition of macroinvertebrate and fish assemblages in a variety of habitats. Jane Roberts and John Ludwig migrated down from CSIRO in Deniliquin, NSW, and carried out detailed botanic surveys of the riparian and submerged vegetation in the same habitats. These data will be used for more than simply survey purposes (the field trip was carried out during a NCS general survey of the Chowilla region) - we also hope to uncover patterns of association among the flora, fauna and physicochemical environment. [The reasons for the Chowilla survey were outlined in the last newsletter "In Defence of Chowilla".]

Over the Chowilla week, other ASL members came up to offer encouragement - Keith Walker ceased house renovations for a couple of days, Mike Geddes escaped from the family holiday at Lake Bonney caravan park for a day and even that hardworking recluse Bryan Pierce took a well-deserved break for a couple of days of fishing. It was an enjoyable and productive week - and a unique opportunity for a group of limnologists with a wide variety

of interests and field skills to cooperate in such a survey. Lance deserves our thanks for his success in coordinating such a trip.

Mike Kokkinn has returned to Adelaide from his teaching post at Warrnambool; he is now "educating" nurses at the SAIT across the road from the Zoology Department, giving him time to exchange a few ideas with the Verco Medallist Bill Williams. "Jungle" Jim Puckridge is grappling with savage fish in Coopers (Creek) and will return in mid-October, no doubt full of wild stories of bony bream this long and the callop that got away! Recently, that doyen of geomorphologic fame, Martin "Bovver-boy" Thomas returned from a trip on the Murray that coincided with the "River Murray Ramble" - in his equipment He captured some 20 houseboats, one of which tried to crush him (alas, unsuccessfully).

Many of the Honours students in both Botany and Zoology are nearing the end of their projects. Congratulations are due to Alison Turnbull who won the 1988 Ian Laing Prize, offered by the Hydrological Society of South Australia for her Honours research. In the next State Affairs, we hope we can present a brief outline of the Honours students' findings.

Alice Wells and Phil Suter are still picking through their rich finds from the Alligator River work. Phil eagerly awaits the "bugs" that will be collected by some artificial substrata emplaced by Paul Harvey of the Scientific Exploration Group in an unnamed pristine stream in the Gammon Ranges - only a bushwalk away. Mike Burch and Denis Steffenson attended the Second Phycology Conference in Melbourne recently, presenting papers on toxic blue-green algae and red tides. Dr Paul Brody from New Zealand visited the State Water Labs to discuss blue-green algae with the boys from Bolivar.

Remember: Watch the national papers for advice about AWRAC summer scholarships - these will be offered by a number of research centres. They have a tenure of 12 weeks and a stipend of approximately $3,000. These scholarships are a great initiative and encourage young tyros to venture into limnological research.

In mid-June several U of Adelaide limnos were involved in a Native Fish Management Plan Workshop in Canberra, organised and funded by the Murray-Darling Basin Commission. Lance Lloyd, Bryan Pierce, Mike Geddes and Jim Puckridge (who was present in spirit while his body was stranded at Coongie Lakes by floods) presented three of the 14 papers at the workshop. Papers ranged from hydrology and catchment management, to water quality, fisheries management and fish biology. Interesting concepts

discussed included water allocation for a "fish flood", "river resnagging" and public awareness via a "fish care" programme. In addition, lots of sensible limnology was discussed. It was great to see ASL stalwarts Don Buckmaster and Richard Tilzey behaving in a manner most becoming their years of training at ASL Conferences; baiting the 'fishos', asking the hard questions and hitting the hard liquor. Norm Mackay and Brian Lawrence hope to publish the "Proceedings" of the workshop later this year and to present a Management Plan for the Murray-Darling fishes next year. Look out for them.

TASMANIA

Immediately following the International Phycological Congress in Melbourne in August about 30 international guests attended the 3rd International Desmid Symposium and the 2nd International Phytoflagellate Workshop, held jointly at Bronte Park in central Tasmania. There was a minimum of formality, limited to two sessions, one on morphogenesis and the nature of algal species, the other on the biogeography of phytoflagellates. Most time was spent among the native haunts of Australia's most distinguished freshwater flora, and on microscopy and videography of Australian endemics.

After sad farewells, a number of European delegates stayed on to do field work on microcosms of the chemoclines of meomictic lakes of the World Heritage Area's Gordon River.

Western Australia

Correspondent: Shirley Balla ,
BES, Murdoch University, Murdoch,W.A. 6150

Dr Tim M. Berra, Professor of Zoology at Ohio State University, and an ASL member since 1969, is back in Australia. He is on sabbatical at the Western Australian Museum in Perth until June 1989. Tim is continuing his studies that were begun in 1986 on the ecology of the salamander fish, Lepidogalaxias salamandroides, with Gerry Allen. This fish is endemic to southwestern W.A. and lives in pools that dry up during summer. It reappears when rain refills the pools. How does the salamander fish survive the desiccation of its habitat? That is the research topic Tim is tackling.

Dr. Greg Ivey, who did his undergraduate and master's degree at the University of Western Australia recently returned to the Centre for Water Research to take up a position as lecturer in

Environmental Fluid Dynamics. Greg is looking at mixing in stratified fluids especially mixing due to internal waves in the hyperlimnetic layer, and large scale flows. His work in the latter will be aided greatly by a soon-to-be constructed rotating table, which will allow him to create dynamic simulations of the earth's rotation in lab experiments. The table will be finished in 1989.

"If you can imagine a very large, direct drive turntable that can play albums that weigh up to 1000kg, then you've got a pretty good idea of how the rotating table operates", Greg said. He will be studying inflow and outflow to waterbodies like reservoirs and lakes, and coastal oceanography, particularly the Leeuwin current.

After gaining his PhD, Greg went to the Canada Centre for Inland Waters at Burlington Ontario, returning to Australia in 1983 when he joined the ANU's research school for earth sciences.

Dr. Chari Pattiaratchi, who recently joined the CWR as a lecturer in Coastal Engineering, is developing new field methods to study the movement of sediments in the continental shelf. The system will use an acoustic doppler to send sound waves through the water, with the change in frequency being proportional to the change in sediment concentration. Another method he will use to measure sediment is optical backscatter, where the amount of light recieved through water is inversely proportional to the amount of sediment. His work will have application in determining coastal erosion, the siltation of harbours and estuaries and the planning of new coastal structures. Chari gained his BSc, MSc and PhD in Oceanography at the University College of Swansea, in Wales.

Dr. Murugesu Sivapalan joined the CWR most recently, as a lecturer in Subsurface Water Hydrology. He is currently working on extreme flood estimation in the southwest of W.A.. Siva said "A fundamental problem in estimating floods is determining the volume and the time-space distribution of rainfall excess, the fraction of rainfall which flows off the surface rather than soaking into the ground". Siva's research project, funded jointly by AWRAC and the WA Water Authority, is aimed at evaluating methods previously used for estimating extreme floods, and developing better models with which to estimate floods. He will use methods such as remote sensing, Landsat data and spatial data based on his research work. Siva comes to the CWR from Princeton University, where he was a research associate after earning his MSc and PhD in hydrology there.

Queensland

Correspondents: Stuart Bunn and Brad Pusey, Division of Australian Environmental Studies, Griffith University, Nathan, Qld, 4122.

Greetings from the corruption capital of Australia! (Although, it seems we now share that distinction with Adelaide. Perhaps we could get the South Australian police to throw a few ASL poets in the river). We have bucket-loads of stimulating limnological news for you this issue and, to prevent a recurrent bout of nausea, we have refrained from any balladry (please take note "Banjo" Boulton!).

The Centre for Catchment and Instream Research (CCISR or "sizza"), has been inexorably gathering momentum, and now hosts 17 full- and part-time research staff. New appointees include Dr Rabi Misra and Ms Deb Harrison: Rabi is working with Prof. Calvin Rose on a joint DPI/ACIAR project and Deb is assisting Angela Arthington with a report on the management of Wivenhoe Dam. The Centre's first annual report is soon to be released and is keeping Angela as busy as a one-legged person at a bum-kicking contest. Distribution of this document will be limited, however, additional copies can be obtained from the above address upon receipt of a complete set of Coca Cola bottle tops spelling CCISR.

Work on the Bjelke Petersen Dam project is progressing and is scheduled for completion in 1989. Recent work included modelling the in-stream habitat requirements of fish in Barambah Creek with a view to simulating changes to fish habitats with changes in discharge. Novel methods (usually confined to sociology) were used to generate habitat preference curves for the simulation. Such methods will, in the future, stay confined to sociology. A warm thanks to those few who took part.

The "Tilapia Kids", an appellation they detest so please do not use it, (Dave Bluhdorn, John Delaney & Karen Hedstrom) recently completed collecting around Cairns and even more recently in the Gascoyne region of W.A. One wonders where else could they go now to collect this fish (Scotland perchance?). John has recently left the project to begin post-graduate research at QIT on rats (cane-field rodents, not the ones in the QIT refectory).

Jane Hughes continues to poison various aquatic beasts with pesticides and grind them up (electrophoretic analysis she assures us). She spends most of her free time posing for photo's for local newspapers. Brad Congdon, also a "gel jockey" , does the world a favour by grinding up vast numbers of *Gambusia* in an effort to understand the genetic basis of salinity tolerance. Pete Mather is now firmly entrenched in Chris Austin's old job at QIT and has begun searching for the lost manuscript on *Cherax* taxonomy. Good luck Pete! Ms Deb Harrison has commenced post-graduate studies on the genetics of hatchery-raised Yellowbelly and Silver Perch under the tutelage of Pete Mather. Ms Manon Griffiths (no relation to this University) is unfortunately leaving limnology to work on terrestrial bugs, perish the thought. She will be sorely missed and we wish her every success in her endeavours.

Stuart Bunn and Brad Pusey have begun preliminary investigations of rainforest streams in the Conondale Range north of Brisbane. Working in these streams is a pleasant change from the leech infested ditches of W.A. (sorry Don). Both fish and invertebrate taxonomy is a bit of a worry

though. We would be only too happy to supply material to anyone interested in the fauna of this little known region.

Recent limnological visitors to Brisbane include Mr Ian Jowett, Ministry of Agriculture and Fisheries, N.Z., Dr John Endler, UCLA Santa Barbara (Leon who?), Dr Gerry Fitzgerald, Laval University, Quebec (Leon who??) and Neil Loneragan, Murdoch University (he knows of him). Mr Ian Jowett was responsible for setting up the hydrological simulations for CCISR. John Endler was invited to Australia to give the annual Ormande Butler lecture in genetics at the University of Queensland. He spent two weeks in the field with a high-tech spec machine (that goes ping!) investigating colour variation in rainbow fish. He also collated valuable field information for his new book on "Touring Downunder on a Dime a Day". Gerry Fitzgerald happened to be passing this way while on holiday and kindly gave an impromptu seminar on jetlag, and cannibalism in sticklebacks. Neil got on the wrong plane and ended up in Brisbane instead of Rockhampton. We entertained him for a couple of days and then sent him on his way.

Don Edward, Andrew Storey, Pete Davies and your faithful correspondents went on a whirlwind tour of FNQ after ASL. In their trusty Commodore (hired for the occasion) they visited several local points of limnological interest from Townsville to Daintree. Pete Davies relived his reef fish dinner from the conference all the way, much to the delight of his fellow travellers. We understand that the car was destroyed on return.

We now have a fairly reliable source of Emu Bitter so I guess we'll survive long enough to keep up a steady stream of drivel for this rag. To conclude, a small literary contribution dedicated to the aspiring poets of the previous newsletters:

There was a young man from South Australia,
Whose arse smelt just like a dahlia,
Tuppence a smell was all very well,
But thruppence a lick was a failure.

"Mummy - is there really a Father Christmas?"

NEWS EXTRA !!

A limnologist and an ex-limnologist take out the award for the best chemical engineering paper published in Australia in 1988.

A paper on "New airstripping process for lowering acute toxicity of wastewater from Esso crude oil terminal, Western Port, Victoria" by Russell Tait, Chris Birch (Esso), Geoff Brand (Marine science Labs), Colin Gibbs (Marine Science Labs) and Greg Terrens (Esso), won the John A. Brodie Medal for the best chemical engineering paper presented at CHEMECA '88 Process Industries Conference in Sydney, or presented at any Institute of Engineers meeting in 1987/88.

Geoff Brand used to be a limnologist before he turned salty and joined MSL at Queenscliff.

The paper was a result of a multidisciplinary team tackling the problem of reducing the toxicity of an effluent stream from Esso's operations. The work has lead to the development of a new treatment process to remove volatile hydrocarbons and sulphides from the wastewater, and render the effluent non-toxic to the receiving water. A $3M plant will be built at Long Island Point, near Hastings in Victoria.

Threnody for a Hyperhalophiliac

I am pleased to read that my good friend William Williams (WW) has sought mental rehabilitation in culling the literary hills of Cumbria. Pages 14-15 of ASL News 26(3) leave no doubt that intemperate draughts of hypersaline waters have joined the long list of his unsavoury penchants, with obvious ill effect on his mental acuity.

"To thirst and find no fill - to wail and wander
With short unsteady steps - to pause and ponder"

Apparently (Ibidem pp. 33-41), contemplation of that English ice-carved land, and

"those long deep channels for the Atlantic's voice",

has soothed the torment and softly brought some elegance of address.

In all the quarter century I have known Bill, I have never thought of him as at all lyrical, his poetical prowess never reaching much beyond bar-room ballads, in his native Scouse,

"She ware only a minewarkers daughter but she loved 'er 'uddersfield".

Has someone passed him the laudanum bottle? Whether or not, his metamorphosis, prompting his favouring us with a Beginners Guide to William Wordsworth (WW), Ruskin, de Quincy and U.T. Cobley, is welcome contrast to the salt-crazed vituperation he aims at this isle, which, he would have us believe, is perfidious and nook-shotten (dear Editor - please inform him, tactfully, that that is Shakespeare, not Wordsworth) when plainly, physiographically and culturally, it is the thoughtful, less-trampled kinsman of the place which affords him such long-range solace.

However, his evening classes in literary appreciation could have led him beyond the singsong daffodils, that drawing-room property like flights of ceramic ducks, brass swallows and resurrection plants, to a deeper awareness of this Lakeland poets as percipient limnologists. How to better describe, for instance, the geomorphology of my corrie lakes than

"On the right, Striden Edge round the Red-tarn was bending
And Catchedicam its left verge was defending,
*One huge nameless rock in the front was ascending"....**

or, of the same place,

"It was a cove, a huge recess
That keeps till June December's snow
A lofty precipice in front
A silent tarn below." *

And what an evocation of my reclusive brown lakes lies in

"There sometimes doth a leaping fish
Send through the tarn a lonely cheer;
The crags repeat the raven's croak
In symphony austere;"

There is no such exquisite picture of his lakes, but they are captured in the metronomic metre of a Masefield parody:-

"Dirty south-Oz salt lake
With a brine-caked gumboot,
Jutting through the salt bush
In the cracked harsh plain."

Yes, dear Bill, de Quincey would have had the measure of you, as I have. He was perceptive with or without the hash. After his first high, in 1804,

"It was Sunday afternoon, wet and cheerless, and a duller spectacle this earth of ours has not to show than a rainy Sunday in London."

Obviously, he hadn't seen Melbourne under the same conditions, but I much prefer that, and Thompson's rejection of the city's "noisome damps" to Wordsworth's prattle from Westminster Bridge.

De Quincey and my grandfather had much in common. The latter died at 88 after 74 years of hard boozing. And De Quincey? Hear Palinurus (Unquiet Grave -- Ecce Gubernator):-

"De Quincey: decadent English essayist who, at the age of 75, was carried off by fifty years of opium eating."

*Whether or not the little doggie ate his dead master is irrelevant!

The silly bugger! He should have started a lot earlier, like old Alfie, my grandfather!

And "carried off", mind you! What a beautiful euphemism, like some grand catefalque of wafting papavers, or being buried in an oaken tun (butt of Malmsey perhaps?)

It is true that the more famous WW had much to say which resonates, but much which tinkles like an Herdwick's bell. To take him at face value is like phasing out on Tennyson's halucinogenia from that land of lotic limnology:-

"There is sweet music here that softer falls
Than petals from blown roses on the grass
Music that gentlier on the spirit lies
Than tir'd eyelids on tir'd eyes.....

Here are cool mosses deep
And thro' the moss the ivies creep
And in the stream the long-leaved flowers weep
And from the craggy ledge the poppy hangs in sleep" **

without countenance of its clear antecedent

"Muscosi fontes et somno mollior herba" (Virgil-Eclogue X)

As Chesterton reminded us, there is "no more a new school of poetry than sleeping in a ditch is a new form of architecture". Temper Wordsworth, Bill, with Beaudelaire (Fleurs de Mal):-

"The immoderate taste for beauty and art leads men to monstrous excesses. In minds besotted with a greed of the beautiful the balance of truth and justice disappear".

Against the baroque of daffodils must be set Wordsworth's railings, of a futile athalassic Canute, ironically to find sublimation in Dr.Beeching:-

"Is then no nook of English ground secure
From rash assult?
Now, for your shame, a Power, the Thirst of Gold
That rules o'er Britain like a baneful star,
Hear ye that Whistle? As her long linked Train
Swept onwards....."

** There's that soporific poppy again!

And how fully the wheel soon turns, to that quixotic knight defender of Victoriana:-

"The train at Pershore station was waiting that Sunday night,
Gas light on the platform, in my carriage electric light,
Gas light on frosty evergreens, electric on Empire wood,
The Victorian world and the present in a moment's neighbourhood".

and

"Snow falls in the buffet of Aldersgate station,
Toiling and doomed from Mooregate Street puffs the train,
For us of the steam and the gas light, the lost generation,
The new white cliffs of the City are built in vain".

And, to bring us up to trendy Adelaide date:

"It's for Regency now I'm enthusing
So we've Regency stripes on the wall
and - my dear, really freightf'lly amusing,
A dome of wax fruit in the hall -
We've put the Van Gogh in the bathroom,
Those sunflowers looked so out of date
But instead, as there's plenty of hearth room,
Real ivy grows out the grate"

(Winthrop Mackworth Redivivus)

Really William David, if it's solace you seek, is it there, in those far-off hills, now a National Caravan Park? Instead of frightening mice from under Queens' chairs thou shoulds't dwell among untrodden ways beside our springs of Dove.

Tyler, World Heritage Area

Some remarkable new Australian species .....by Ian A E. Bayly

Some ASL members may have noticed the recent appearance of a large taxonomic paper by Dick Hamond on the non-marine harpacticoid copepods of Australia. It amounts to some 220 pages and occupies an entire issue of Invertebrate Taxonomy (Vol. 1, No. 8). Parts of this work will be of greater general interest to ASL members than first meets the eye. Because of the length and complexity of the paper, I thought it worthwhile preparing the following synopsis (in the form of a partial key) for the benefit of our membership. The key characters are taken verbatim from Dick Hamond's paper.

Partial key to the males of Australian species of Canthocamptus

1(a) General appearance very much like that of the female [appearance average], even uncoupled males have their AIs coiled up almost as in precopula, AI not sufficiently extended as to be worth drawing by itself. Colour - alive, greenish white; dead, whitish-grey. remarkably like C.maoricus.....billwilliamsi
(b) These characters not combined.....2

2(a) General appearance apparently that of the female [prosome large (but less so than in mortini)], AI of the offset type, P2 and P4 not remarkable. Colour - not seen alive, pale grey when dead. Habitat - among dirt and rotten plant-remains, and in or under Sphagnum cushions.....dedeckkeri
(b) These characters not combined.....3

3(a) General appearance very like the female [of moderately slender build, prosome not unduly large], AI of the offset type. Colour [and behaviour] - seen lethargically twisting, like maggots in slow motion, pale whitish or straw-yellowish grey, with tinge of palest orange-pink in intestine; emerge from dirt only after 10-30 min, as if with extreme reluctance; when dead, of usual pale grey.....timmsi
(b) These characters not combined.....4

4(a) General appearance very like the female [prosome very deep in side view giving the animal a characteristic "big-headed" appearance], AI rather curled up at first, but after about 3-5 years straightens out. Colour - not observed alive; when dead dull grey.....mortoni
(b) These characters not combined.....remaining 19 species [for separation of this, consult Hamond (1988)]

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BOOK REVIEWS

Waterplants in Australia

by G.R. Sainty and S.W.L. Jacobs

Australian Water Resources Council,
National Coordinating Committee on Aquatic Weeds

Reviewed by Rod Oliver MDRFC

Have you seen the new little pocketbook "Waterplants in Australia" by Geoff Sainty and Surrey Jacobs? This is an excellent handbook produced by the National Corodinating Committee on Aquatic Weeds, under the auspices of the Australian Water Resources Council, as part of a public awareness campaign on aquatic weeds. It is set out in such a way that even I am able to identify some of the common aquatic macrophytes. The key to this amazing feat is the clever layout of the book. The plants have been colour-coded into seven categories based on their growth form and most obvious features. The seven categories are: free floating, floating attached, submerged and emergent feathery, submerged not feathery, emergent narrow leaf, emergent broad leaf, and trees/shrubs. These categories are generally distinct enough to enable even a beginner to get to the correct section of the book. Each opening then contains an excellent glossy photograph of the species as well as a drawing emphasising important features. The margin around each photograph consists of a series of small diagrams and boxes which are standard throughout the book and which cover the range of variation in features such as leaf shape, leaf position, flower colour, reproductive mode, etc. The appropriate distinguishing characters of each species are colour highlighted.

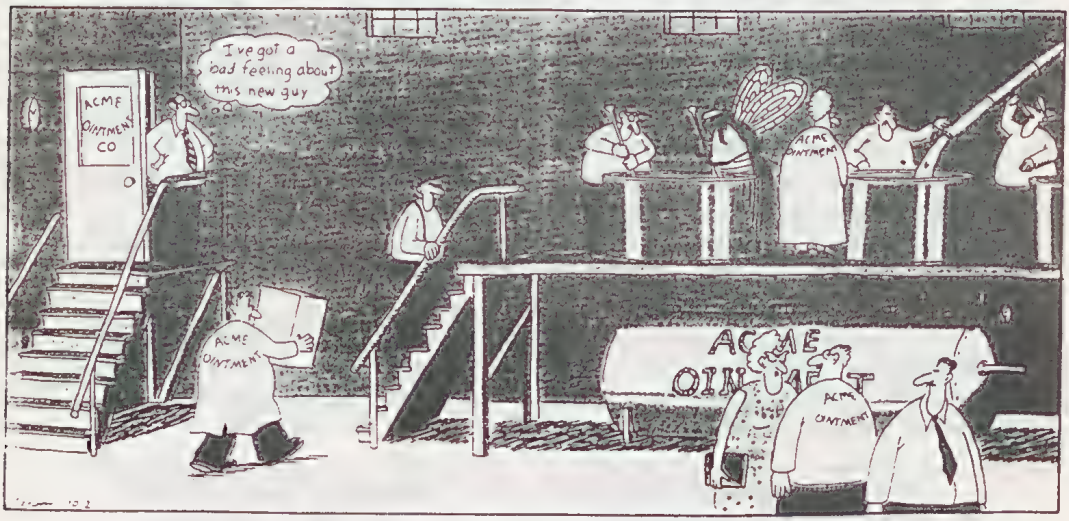
The facing page contains general biological information about the species, including notes on whether or not it is a native, problems it may cause, peculiarities of its breeding system and the various habitats in which it is likely to be found in Australia.

All of this is beautifully set out in a book ca 10 x 18 cm and 144 pp long, a true handbook!

It is impossible to recommend this book too highly. Every biologist in the country should have one on their shelf. Even if you currently have no interest whatsoever in aquatic macrophytes, I am sure you will find that this little book soon captures your imagination. Best of all, for the present, it is free! Copies, in limited numbers can be obtained by writing to :-

The Secretary,
Australian Water Resources Council,
C/- Department of Primary Industry and Energy,
GPO Box 858,
Canberra ACT 2601.

THE FAR SIDE *by Gary Larson*



Ecology - Potentials and Limitations

by Tom Fenchel

Publisher: Ecology Institute
Oldendorf/Luhe
West Germany 1987

Reviewed by P.S.Lake Monash University

In the introduction to this book Professor O. Kinne rightly points out that "never in history has humanity been more in need of ecological knowledge", and yet within the world scientific community ecologists are held in low esteem. Ecologists are viewed as indulging in a "soft science", practicing natural history with a tape measure, while top scientists crack genetic codes, build faster and bigger computers produce more elementary particles, etc.....Top scientists in cahoots with ambitious politicians set the agendas for scientific research and thus it is not surprising to find that ecological research is poorly funded and poorly rewarded in most countries, including (or especially) Australia. There is no Nobel Prize for Ecology!

The Ecology Institute is "an international nonprofit organisation of research ecologists" that aims to support and reward excellence in ecological research. One of the ways it does this is to award annually an imminent ecologist the E.C.I. Prize. The field of ecology rotates annually - marine ecology, terrestrial ecology, and limnology - with 1988 being the year for limnology. In 1986 Professor Tom Fenchel of the University of Copenhagen was awarded the E,.C.I. prize in marine ecology. The prize is a mixed blessing, the winner gains a sizable stipend and the oblogation to write a book. The book under review is the result of Professor Fenchel's win and is the first of such books from the E.C.I.. Presumably a condition for giving the prize to some ecologists as opposed to others is that they have the time to write a book. With the contuinual global curtailment of the funding of ecological research by developmentalist governments, such fortunate people may be harder and harder to find.

After a succinct "A Laudatio" of Professor Fenchel's very significant research efforts by Professor J. Gray, Fenchel launches into examining what ecology is and arrives at the definition that ecology is "the study of the principles that govern temporal and spatial patterns for assemblages of organisms". Fenchel believes that it is most doubtful that the explanations of ecological

phenomena will be reduced to a few principles, yet sees the quest to do so as the intellectual driving force of ecology. Such a quest has a very reductionist tone about it, and thus it is not surprising to find that the reductionist method of reasoning is strongly advocated throughout the book. Holostic explanations are given short shrift by Fenchel and thus it is not surprising to find in the book that many concepts essential to the understanding of communities and ecosystems are not discussed. Any hints of ecological hierarchy are dismissed. Thus, in my view, because of the reductionist tone of the book and the lack of discussion of essential problems such as the regulation of species richness in communities, the book presents a somewhat limited view of the intellectual endevours of ecology.

After arriving at a definition of ecology the use of models in ecology is discussed with an illuminating population model of bubonic plague outbreaks in early eighteenth century Copenhagen. Ecology has a central focus and substantially ovelaps with other disciplines; Fenchel stresses this by outlining the relationship between ecology and natural history, evolutionary biology, physiology, behaviour and biogeochemistry.

At the end of this chapter , Professor Fenchel bemoans the immense proliferation of ecological papers in recent years. In spite of the universal funding cuts, ecologists still write a lot, producing "an increasing amount of trivial and sloppy work". This is a harsh judgement. Given the immense but sadly declining diversity of habitats on this planet, it may be necessary for many seemingly particular systems and situations to be described before general patterns emerge. Ecology has already suffered from scientists in the reductionistic mode taking the results from a particular system and deriving a general principle.

In Chapter III entitled "Concepts, Ideas and Problems in Ecology" crucial matters such as the importance of scale in understanding ecological systems, competition, extinction, the structure of communities, and the evolution of life cycles are discussed. Some of these such as the competition and structure of biotic communities, are rather dissapointingly dealt with while the discussions and "heterogeneity in time and space" were of great interest to me and triggered off a rain of interesting speculations, with such incitements as "critical patch size", "fugitive equilibria".

In Chapter IV "Some Examples of Communities and Ecosystems", three major research areas to which Fenchel has made considerable contributions are discussed. By far the most interesting to me was the part on plankton, which sucessfully overturns some of the old notions that I've harboured uncritically for years about primary production and phytoplankton. The new view of planktonic primary production is that a range of organisms, heterotrophic bacteria, nanoflagellates, Cyanobacteria - all much smaller than classical phytoplankton - make very substantial contributions to primary production in many aquatic ecosystems. The unravelling of the "microbial loop" is a fundamental breakthrough in our understanding of planktonic systems with the discovery that there are several more trophic levels in the planktonic food chains than outlined in classical limnology textbooks. This is a fascinating and stimulating part of the book.

In keeping with the aspirations of the Ecology Institute, the book ends with a chapter on "Ecology and Society". Fenchel is most unhappy about attempts to popularize ecology - making ecological viewpoints amenable to popular understanding. He feels strongly, for example, that ecologists should in public pronouncements limit themselves to only those matters "on which they have real expertise". This is a very conservative notion; it means, for instance, that ecologists should not question developments in which they are not explicit experts. Yet such developments may give rise to considerable environmental problems and it is often ecological thinking that sees connections and implications thet experts dismiss; acid rain, heavy metal contamination and so on.

The author is very wary of environmental groups practicing "ecologism". He roundly attacks Greenpeace as pandering to the "sentimental appeal of affluent westerners" - largely because Greenpeace has tried to prevent seal harvesting in Greenland and the annual slaughter of Pilot Whales on the Faroe Islands. I wonder what would be Fenchel's reactions to Greenpeace's campaigns to stop offshore incineration of toxic wastes, ocean dumping of hazardous wastes, or French nuclear testing in the South Pacific.

The book thus ends on a somewhat sour note. Society could benefit greatly from ecological knowledge and guidance and yet this benefit is in many cases denied - largely for economic reasons. To me it is not surprising that environmental groups spring up and try, often only with a smattering of ecological knowledge, to alter the direction in which society is going. The role of ecologists in this situation is difficult, but it is not one of attacking 'ecologism' and of only speaking out as an expert in a few restricted areas.

In summary I found the book stimulating to read for a variety of reasons. The book is easy to read, it is well presented with very informative illustrations and has a minimum of printing errors. It is a clearly controversial book because of some of the strongly held views of the author. It would appeal, I imagine, to a range of potential readers, from graduate students to experience ecologists.

NEW BOOK

The Conservation of Australian Wetlands

Edited by A.J. McComb and P.S. Lake

Contents

Tasmanian Wetlands and their Conservation.-
By J.B. Kirkpatrick and P.A.Tyler.
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By F.I. Norman and A.H. Corrick.
Wetlands of New South Wales.-
By R.H. Pressey and J.H. Harris.
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By A.H. Arthington and E.J. Hegerl.
Wetlands of the Northern Territory.-
By C.M. Finlayson, B.J. Bailey, W.J. Freeland and M.R. Fleming.
Western Australian Wetlands.-
By J.A.K. Lane and A.J. McComb.
Wetlands Conservation in South Australia.-
By J.A. Lothian and W.D. Williams.
Preservation of Australia's Wetlands: A Commonwealth Approach.-
By F.B. Michaelis and M. O'Brien
The Conservation and Management of Australian Wetlands- a Discussion.
Index, Organisms., Subjects, Water Bodies and Locations.

Order from Surrey Beatty and Sons,
43 Rickard Road,
Chipping Norton, NSW 2170

BIBLIOGRAPHY OF FRESHWATER ECOLOGY

Osbourne, P.L. (1988). *Bibliography of freshwater ecology in Papua New Guinea* Biology Department Occasional Paper 9, University of Papua New Guinea. 65pp. 3 maps, 12 plates.

This bibliography contains 174 references covering scientific publications on freshwater ecology in Papua New Guinea. Each reference is arranged in alphabetical order by auther and has an informative abstract. taxonomic works dealing with a group of organisms (e.g. freshwater plants, frogs, fishes) are abstracted but those describing just a few species are only referred in an appendix. Author and subject indices are provided and there is a short introduction with three maps. The paper is illustrated with twelve black and white plates.

The bibliography is available from the University bookshop, P.O. Box 114, University, National Capital District, Papua New Guinea. Cost: K5.95. Overseas orders please add K3.00 for packing and posting.

University of Otago

Dunedin - New Zealand

Postdoctoral Fellow in Aquatic Ecology

Applications are invited for a Postdoctoral Fellowship, tenable for two years commencing in mid-1989, to work in collaboration with Professor C.R.Townsend (who will take up appointment as Chairman of the Department of Zoology on 1st January 1989). Applicants should have completed the requirements for the award of the degree of Doctor of Philosophy, and have experience in the ecology of streams, lakes or marine benthos. Expertise in theoretical ecology and computer modelling is also desirable. The topic of research will be decided by mutual agreement, but candidates should indicate in their applications research areas they would like to pursue. Applications close on 30 November.Salary NZ$35,000 p.a.

Applicants should send their curriculum vitae and the names of two academic referees to:

Dr C.R. Townsend,
School of Biological Sciences,
University of East Anglia,
Norwich, NR4 7JT,
United Kingdom.

A further copy, quoting reference number A88/59, should be sent direct to the registrar, University of Otago, PO Box 56, Dunedin, New Zealand.

D.W. Girvan
Registrar

"Just nibble at first . . . But when you hear them yell 'Piranha!' — go for it."

Thesis Abstracts

ASSESSING THE CONSERVATION VALUE OF RIVERS AND STREAMS WITH PARTICULAR REFERENCE TO THE RIVERS OF EAST GIPPSLAND, VICTORIA

Luisa Ann Macmillan

A Masters thesis submitted in March 1987 to the Department of Chemistry and Biology, Division of Mathematical and Environmental Sciences, Chisholm Institute of Technology.

Although many Australian rivers have been modified and degraded in the last two hundred years, systematic inventories of high conservation value rivers are conspicuously absent. This thesis addresses these inventory needs by developing general procedures for assessing nature conservation value (Part 1) and by providing detailed information on the conservation value of rivers in East Gippsland, Victoria (Part 2).

Part 1. In assessing the conservation value of rivers it is important to compare ecologically similar "types". A framework is developed for classifying river types based on four key features which influence the physical, chemical and biological nature of rivers. These key features are topography, geology, temperature and rainfall. Procedures for classifying distinct segments within river systems are described in addition to a framework for developing regional river classes across Australia.

The scientific criteria commonly used to evaluate terrestrial conservation areas - diversity, rarity, naturalness, area and representativeness - are reviewed and their applicability to river systems examined. Evaluation procedures suited to Victorian rivers and based on existing or easily obtained data bases are developed. Particular attention is paid to system integrity and instream biota, especially fish. Greatest emphasis is placed on "naturalness" as an evaluation criterion.

Strategies for protecting the conservation values of rivers are considered, in particular the "wild and scenic rivers "concept. It is concluded that the protection of river conservation values requires a flexible range of management strategies, a feature not found in the "wild and scenic rivers" approach.

Part 2. East Gippsland is a predominantly forested region and one of the least modified parts of Victoria. Its twenty- five descreet river systems include tributaties of the Snowy River, south flowing rivers and streams, and small internal systems.

Each river system has been divided into mainstream segments and low order (order 3) tributaries. These segments are classified using physiography, rainfall and geology. A total of 199 low order streams, representing twenty-six stream types, are identified in the region. Twelve mainstream segment types are distinguished. The larger river systems have the greatest diversity of stream and segment types.

The conservation values of the rivers is assessed using three features: system naturalness (and associated rarity and diversity), fish naturalness and rarity, and geological and geomorphological sites. Very high system naturalness is found in 54 low order streams, 4 mainstream segments and 8 entire systems. Naturalness of fish communities is very high in 18 of the river systems; some rare species also occur. There are 25 riverine sites of geological/geomorphological significance associated with rivers. Many of the streams are of very high conservation value and in a state context twelve of the smaller river systems are of outstanding limnological significance. Another eight tributaries are probably of outstanding significance.

The extent to which these conservation values are currently protected is assesed, as is their likely future status given landuse changes recently recommended to the state government by the Land Conservation Council. The recommendations significantly improve on the currently inadequate level of protection. However some of the outstanding rivers of the region will remain inadequately protected unless further measures are taken.

LIMNOLOGY BIBLIOGRAPHY

Thanks for the copies of the first page of the reprints forwarded to me. My in-file for the bibliography is much reduced now, and doesn't consume too much of the filing cabinet. The bibliography is also for inclusion of "limited circulation", "internal reports" and other non-refereed/published papers. Please don't forget to send these to me. The address for inclusion is Russell Tait, Esso Australia Ltd, P.O. Box 4047, Sydney, N.S.W., 2001.

1987:

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COMING EVENTS

1989

10-19 MAY: IAHS Third Scientific Assembly., Baltimore, Maryland . A forum for review of the latest developments in Hydrology. IAHS Assembly, c/o American Geophysical Union, 2000 Florida Avenue, N.W., Washington D.C. 20009 USA

29 MAY -3 JUNE Symposium on Intrazooplankton Predation, Broa (Sao Carlos), Brazil. Registration by Dec 1st. For forms and information contact: H.J. Dumont, Institute of Ecology, State University of Ghent, Ledeganckstraat 35, 9000 Ghent, Belgium, or J.G. Tundisi, Limnological Laboratory, CRHEA, Department of Hydrology and Sanitation, USP, Av. Dr. Carlos Botelho, 1465, Sao Carlos, SP. 13560, Brazil.

30 MAY-1 JUNE: ACADS Watercomp '89. The first Australasian conference on technical computing in the water industry. Contact The Conference Manager, Watercomp '89 Conference, The Institution of Engineers, Australia, 11 National Circuit, Barton, ACT, 2600.

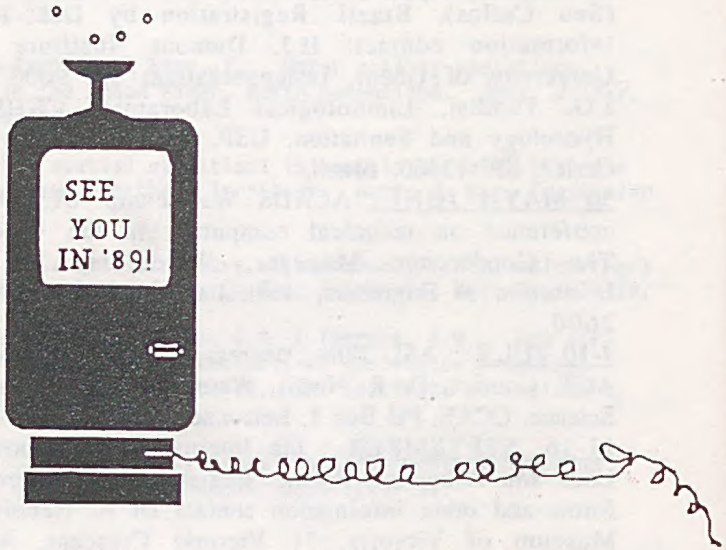
7-10 JULY : ASL 28th Congress and AGM Canberra CAE, Belconnen ACT. Contact: Dr R. Norris, Water Research Centre, School of Applied Science. CCAE, PO Box 1, Belconnen ACT 2616.

11-16 SEPTEMBER : 6th International Symposium on Trichoptera, Lodz and Zokopane, Poland. Registration is before 30 Sept. 1988. For forms and other information contact Dr A. Nebois, Dept. Entomology, Museum of Victoria, 71 Victoria Crescent, Abbotsford, Victoria, 3067. Ph 419 5200

1990

12-15 MAY : ASL 29th Congresss and AGM, Jabiru NT, and Pre-Congress Symposium on the 11th "Water Management in the Alligator Rivers Region". Enquiries: Isabell von Oertzen tel: (089) 792 300, Fax (089) 792 076, Telex 85457.

23-30 AUGUST : V International Congress of Ecology "Development of Ecological Perspectives for the 21st Century", Yokohama, Japan. Contact: Secretary General's Office for Intecol 1990, Institute of Environmental Science and Technology, Yokohama National University, Yokohama 240, Japan.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